

Barbara McClintock

Born:       Hartford, Connecticut  
              16 June 1902

Secondary Education:

Erasmus Hall High School, Brooklyn, New York.

Earned Degrees:

B.S.	Cornell University, Ithaca, New York	1923
M.A.	Cornell University, Ithaca, New York	1925
Ph.D.	Cornell University, Ithaca, New York	1927

Positions held:

Instructor in Botany, Cornell University	1927-1931
Fellow, National Research Council	1931-1933
Fellow, Guggenheim Foundation	1933-1934
Research Associate, Cornell University	1934-1936
Assistant Professor, University of Missouri, Columbia, Missouri	1936-1941
Staff Member, Carnegie Institution of Washington, Cold Spring Harbor, New York	1942-1967
Distinguished Service Member, Carnegie Institution of Washington, Cold Spring Harbor, New York	1967 to Present
Visiting Professor, California Institute of Technology	1954
Consultant, Agricultural Science Program, The Rockefeller Foundation	1963-1969
Andrew D. White Professor-at-Large, Cornell University	1965-1974

Honorary Doctor of Science:

University of Rochester	1947
Western College for Women	1949
Smith College	1957
University of Missouri	1968
Williams College	1972
The Rockefeller University	1979
Harvard University	1979

Honorary Doctor of Humane Letters:

Georgetown University	1981
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Awards:

Achievement Award, Association of University Women	1947
Merit Award, Botanical Society of America	1957
Kimber Genetics Award, National Academy of Sciences	1967
National Medal of Science	1970
Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical Research	1978
The Louis and Bert Freedman Foundation Award for Research in Biochemistry	1978
Salute from the Genetics Society of America,	August 18, 1980

Professional Societies:

AAAS  
American Academy of Arts and Sciences  
American Philosophical Society  
American Society of Naturalists  
Botanical Society of America  
Genetics Society of America (Vice President, 1939;  
President, 1945)  
National Academy of Sciences  
Sigma Xi

Publications:

- Randolph, L.F. and McClintock, B. 1926. Polyploidy in Zea mays L. Am. Nat. 60: 99-102.
- Beadle, G.W. and McClintock, B. 1928. A genic disturbance of meiosis in Zea mays. Science 68: 433.
- McClintock, Barbara. 1929. A cytological and genetical study of triploid maize. Genetics 14: 180-222.
- 1929. A method for making aceto-carmin smears permanent. Stain Technology 4: 53-56.
- 1929. A 2N-1 chromosomal chimera in maize. Jour. Hered. 20: 218.
- 1929. Chromosome morphology in Zea mays. Science 69: 629.
- 1930. A cytological demonstration of the location of an interchange between two non-homologous chromosomes of Zea mays. Proc. Nat. Acad. Sci. 16: 791-796.
- McClintock, Barbara and Hill, H.E. 1931. The cytological identification of the chromosome associated with the R-G linkage group in Zea mays. Genetics 16: 175-190.
- McClintock, Barbara. 1931. The order of the genes C, Sh, and Wx in Zea mays with reference to a cytologically known point in the chromosome. Proc. Nat. Acad. Sci. 17: 485-491.
- Creighton, Harriet B. and McClintock, Barbara. 1931. A correlation of cytological and genetical crossing-over in Zea mays. Proc. Nat. Acad. Sci. 17: 492-497.
- McClintock, Barbara. 1931. Cytological observations of deficiencies involving known genes, translocations and an inversion in Zea mays. Missouri Agricultural Experiment Station Research Bulletin 163: 1-30.
- 1932. A correlation of ring-shaped chromosomes with variegation in Zea mays. Proc. Nat. Acad. Sci. 18: 677-681.
- 1933. The association of non-homologous parts of chromosomes in the mid-prophase of meiosis in Zea mays. Zeitschrift fur Zellforschung und mikroskopische Anatomie 19: 191-237.
- 1934. The relation of a particular chromosomal element to the development of the nucleoli in Zea mays. Zeitschrift fur Zellforschung und mikroskopische Anatomie, 21: 294-328.

- Creighton, Harriet B. and McClintock, Barbara. 1935. The correlation of cytological and genetical crossing-over in Zea mays. A corroboration. Proc. Nat. Acad. Sci. 21: 148-150.
- Rhoades, M.M. and McClintock, Barbara. 1935. The cytogenetics of maize. Bot. Review 1: 292-325.
- McClintock, Barbara. 1937. The production of maize plants mosaic for homozygous deficiencies: Simulation of the  $bm_1$  phenotype through loss of the  $Bm_1$  locus. Genetics 22: 200.
- 1938. A method for detecting potential mutations of a specific chromosomal region. Genetics 23: 159.
- 1938. The production of homozygous deficient tissues with mutant characteristics by means of the aberrant mitotic behavior of ring-shaped chromosomes. Genetics 23: 315-376.
- 1938. The fusion of broken ends of sister half-chromatids following chromatid breakage at meiotic anaphases. Missouri Agricultural Experiment Station Research Bulletin 290: 1-48.
- 1939. The behavior in successive nuclear divisions of a chromosome broken at meiosis. Proc. Nat. Acad. Sci. 25: 405-416.
- 1941. The stability of broken ends of chromosomes in Zea mays. Genetics 26: 234-282.
- 1941. The association of mutants with homozygous deficiencies in Zea mays. Genetics 26: 542-571.
- 1941. Spontaneous alterations in chromosome size and form in Zea mays. Cold Spring Harbor Symposia on Quantitative Biology 9: 72-80.
- 1942. The fusion of broken ends of chromosomes following nuclear fusion. Proc. Nat. Acad. Sci. 11: 458-463.
- 1942. Maize genetics. Carnegie Inst. Wash. Year Book #41: 181-186.
- 1943. Maize genetics. Carnegie Inst. Wash. Year Book #42: 148-152.
- 1944. The relation of homozygous deficiencies to mutations and allelic series in maize. Genetics 29: 478-502.
- 1944. Maize genetics. Carnegie Inst. Wash. Year Book #43: 127-135.
- 1944. Breakage-fusion-bridge cycle induced deficiencies in the short arm of chromosome 9. Maize Genetics Cooperation News Letter 18: 24-26.

- 1945. Neurospora: Preliminary observations of the chromosomes of Neurospora crassa. American Jour. Botany 32: 671-678.
- 1945. Cytogenetic studies of maize and Neurospora. Carnegie Inst. Wash. Year Book #44: 108-112.
- 1946. Maize genetics. Carnegie Inst. Wash. Year Book #45: 176-186.
- 1947. Cytogenetic studies of maize and Neurospora. Carnegie Inst. of Wash. Year Book #46: 146-152.
- 1948. Mutable loci in maize. Carnegie Inst. of Wash. Year Book #47: 155-169.
- 1949. Mutable loci in maize. Carnegie Inst. of Wash. Year Book #48: 142-154.
- 1950. The origin and behavior of mutable loci in maize. Proc. Nat. Acad. Sci. 36: 344-355.
- 1950. Mutable loci in maize. Carnegie Inst. of Wash. Year Book #49: 157-167.
- 1951. Mutable loci in maize. Carnegie Inst. of Wash. Year Book #50: 174-181.
- 1951. Chromosome organization and genic expression. Cold Spring Harbor Symposia on Quantitative Biology 16: 13-47.
- 1952. Mutable loci in maize. Carnegie Inst. of Wash. Year Book #51: 212-219.
- 1953. Induction of instability at selected loci in maize. Genetics 38: 579-599.
- 1953. Mutation in maize. Carnegie Inst. of Wash. Year Book #52: 227-237.
- 1954. Mutations in maize and chromosomal aberrations in Neurospora. Carnegie Inst. of Wash. Year Book #53: 254-260.
- 1955. 1. Spread of mutational change along the chromosome. 2. A case of Ac-induced instability at the Bronze locus in chromosome 9. 3. Transposition sequences of Ac. 4. A suppressor-mutator system of control of gene action and mutational change. 5. System responsible for mutations at a<sub>1</sub>-m2. Maize Genetics Cooperation News Letter 29: 9-13.
- Issued 1956. Intranuclear systems controlling gene action and mutation. Brookhaven Symp. in Biol. #8: 58-74 (Symposium held in June, 1955).

- 1955. Controlled mutation in maize. Carnegie Inst. of Wash. Year Book #54: 245-255.
- 1956. Mutation in maize. Carnegie Inst. of Wash. Year Book #55: 323-332
- 1956. 1. Further study of the  $a_1^{m-1}$ -Spm system.  
2. Further study of Ac control of mutation at the bronze locus in chromosome 9. 3. Degree of spread of mutation along the chromosome induced by Ds. 4. Studies of instability of chromosome behavior of components of a modified chromosome. Maize Genetics Cooperation News Letter 30: 12-20.
- 1956. Controlling elements and the gene. Cold Spring Harbor Symp. Quant. Biol. 21: 197-216.
- 1957. 1. Continued study of stability of location of Spm.  
2. Continued study of a structurally modified chromosome 9. Maize Genetics Cooperation News Letter 31: 31-39.
- 1957. Genetic and cytological studies of maize. Carnegie Inst. of Wash. Year Book #56: 393-401.
- 1958. The suppressor-mutator system of control of gene action in maize. Carnegie Inst. of Wash. Year Book #57: 415-429.
- 1959. Genetic and cytological studies of maize. Carnegie Inst. of Wash. Year Book #58: 452-456.
- 1960. Chromosome constitutions of Mexican and Guatemalan races of maize. Carnegie Inst. of Wash. Year Book #59: 461-472.
- 1961. Some parallels between gene control systems in maize and in bacteria. American Naturalist 95: 265-277.
- 1961. Further studies of the suppressor-mutator system of control of gene action in maize. Carnegie Inst. of Wash. Year Book #60: 469-476.
- 1962. Topographical relations between elements of control systems in maize. Carnegie Inst. of Wash. Year Book #61: 448-461.
- 1963. Further studies of gene-control systems in maize. Carnegie Inst. of Wash. Year Book #62: 486-493.
- 1964. Aspects of gene regulation in maize. Carnegie Inst. of Wash. Year Book #63: 592-602.
- 1965. (1) Restoration of  $A_1$  gene action by crossing over.  
(2) Attempts to separate Ds from neighboring gene loci. Maize Genetics Cooperation News Letter #39: 42-51.

- 1965. Components of action of the regulators Spm and Ac.  
Carnegie Inst. of Wash. Year Book #64: 527-536.
- 1965. The control of gene action in maize. Brookhaven Symp.  
in Biol. #18: 162-184.
- 1967. Regulation of pattern of gene expression by controlling  
elements in maize. Carnegie Inst. of Wash. Year Book #65: 568-578.
- 1968. The states of a gene locus in maize. Carnegie Inst. of  
Wash. Year Book #66: 20-28.
- 1968. Genetic systems regulating gene expression during  
development. Developmental Biol. Suppl. 1:84-112. The 26th  
Symposium of the Society for Developmental Biology (June, 1967),  
"Control Mechanisms in Developmental Processes". Academic Press,  
Inc.
- 1971. The contribution of one component of a control system  
to versatility of gene expression. Carnegie Inst. of Wash. Year  
Book #70: 5-17.
- 1978. Significance of chromosome constitutions in tracing the  
origin and migration of races of maize in the Americas. Chapter 11;  
pp. 159-184, in "Maize Breeding and Genetics", W.D. Walden (ed.).  
John Wiley & Sons, Inc. New York.
- 1978. Development of the maize endosperm as revealed by  
clones. In "The Clonal Basis of Development." 36th Symp. of the  
Soc. for Developmental Biol. (June, 1977), pp. 217-237.
- 1978. Mechanisms that rapidly reorganize the genome. Stadler  
Genetics Symp. Vol. 10, pp. 25-48.
- 1980. Chromosome constitutions of races of maize. Their  
significance for interpreting relationships among races and strains  
in the Americas. (A monograph.) B. McClintock, T.A. Kato Y.,  
and A. Blumenschein (eds.). Published by Colegio de Postgraduados,  
Escuela Nacional de Agricultura, Chapingo, Edo. México, MEXICO.
- 1980. Modified gene expressions induced by transposable  
elements. In "Mobilization and Reassembly of Genetic Information"  
(W.A. Scott, R. Werner, D.R. Joseph, and Julius Schultz, eds.)  
Miami Winter Symposium #17: 11-19. Academic Press, Inc. New York.